

REMARKS

35 U.S.C. § 102 Rejections

The Examiner has rejected claims 1, 2, 5 – 10, 13, 15, 16, 18, and 19 under 35 U.S.C. § 102(a) as being anticipated by Chao.

With respect to independent claim 1, Applicants teach and claim: "A method comprising: forming a thin film stack on a substrate, wherein the thin film stack includes at least a polysilicon layer and an oxide layer; forming a hardmask layer on the thin film stack; forming an anti-reflective coating (ARC) layer on the hardmask layer; patterning the ARC layer; etching the hardmask layer using the patterned ARC layer as a mask; and etching the thin film stack using the hardmask layer as a mask."

With respect to independent claim 10, Applicants teach and claim: "A method comprising: forming a flash memory gate stack on a substrate; forming a hardmask layer on the flash memory gate stack; forming an anti-reflective coating (ARC) layer on the hardmask layer; patterning the ARC layer; etching the hardmask layer using the patterned ARC layer as a mask; and etching the flash memory gate stack using the hardmask layer as a mask."

Applicants teach that an anti-reflective coating (ARC) layer is formed on a hardmask layer. Thus, the ARC layer is a separate layer from the hardmask layer. This is illustrated in Figures 4-7 of the application, where layer 410 is a hardmask layer and layer 412 is an ARC layer formed over the hardmask layer (410). Also, see application paragraphs 21-23.

Chao discloses a method for forming high density flash memory and high performance logic on a single die. Chao teaches a hardmask layer (114) formed over a gate stack. In one embodiment, the hardmask layer of Chao is an ARC layer. (See paragraph 26). Chao does not teach an ARC layer formed over a hardmask layer. Chao discloses only one layer formed over the gate stack: a hardmask layer, which, in one embodiment, may be an ARC layer. Thus, Chao does not teach an ARC layer formed over a hardmask layer, as claimed by Applicants. Therefore, Applicants respectfully submit that Chao does not anticipate all elements of independent claim 1 and independent claim 10.

Claims 2, 5-9, 13, 15, 16, 18, and 19 are dependent upon claims 1 and 10, respectively. Thus, for at least the same reasons advanced above with respect to independent claims 1 and 10, Applicant respectfully submits that Chao does not anticipate all elements of dependent claims 23-24.

Applicant, accordingly, respectfully requests withdrawal of the rejections of claims 1, 2, 5-10, 13, 15, 16, 18, and 19 under 35 U.S.C. § 102(a) as being anticipated by Chao.

35 U.S.C. § 103 Rejections

The Examiner has rejected claims 2-4, 11, 12 and 14 under 35 U.S.C. § 103(a) as being unpatentable over Chao in view of Mahorowala.

As described above with respect to independent claims 1 and 10, neither Chao nor Mahorowala teach "forming a hardmask layer on a thin film stack;

forming an anti-reflective coating (ARC) layer on the hardmask layer; patterning the ARC layer; etching the hardmask layer using the patterned ARC layer as a mask; and etching the thin film stack using the hardmask layer as a mask," as claimed by Applicants. Claims 2-4, 11, 12, and 14 are dependent upon independent claims 1 and 10, respectively. Thus, Applicants respectfully submit that claims 2-4, 11, 12, and 14 are not rendered obvious by Chao or Mahorowala, individually or in combination, because these references do not teach or suggest each and every element of these claims.

Applicant, accordingly, respectfully requests withdrawal of the rejections of claims 2-4, 11, 12 and 14 under 35 U.S.C. § 103(a) as being unpatentable over Chao in view of Mahorowala.

The Examiner has rejected claims 7 and 17 under 35 U.S.C. § 103(a) as being unpatentable over Chao in view of Kumar.

As described above with respect to independent claims 1 and 10, neither Chao nor Kumar teach "forming a hardmask layer on a thin film stack; forming an anti-reflective coating (ARC) layer on the hardmask layer; patterning the ARC layer; etching the hardmask layer using the patterned ARC layer as a mask; and etching the thin film stack using the hardmask layer as a mask," as claimed by Applicants. Claims 7 and 17 are dependent upon independent claims 1 and 10, respectively. Thus, Applicants respectfully submit that claims 7 and 17 are not rendered obvious by Chao or Kumar, individually or in combination, because these references do not teach or suggest each and every element of these claims.

Applicant, accordingly, respectfully requests withdrawal of the rejections of claims 7 and 17 under 35 U.S.C. § 103(a) as being unpatentable over Chao in view of Kumar.


Applicant respectfully submits that the present application is in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call Michael A. Bernadicou at (408) 720-8300.

Pursuant to 37 C.F.R. 1.136(a)(3), applicant(s) hereby request and authorize the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, to Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: October 31, 2005



Michael A. Bernadicou
Reg. No. 35,934

Customer No. 008791
12400 Wilshire Boulevard
Seventh Floor
Los Angeles, CA 90025-1030
(408) 720-8300